

# Designing Photoswitchable Peptides Using the AsLOV2 Domain

Oana I. Lungu,<sup>1,2,3</sup> Ryan A. Hallett,<sup>1</sup> Eun Jung Choi,<sup>1</sup> Mary J. Aiken,<sup>1</sup> Klaus M. Hahn,<sup>2,3,\*</sup> and Brian Kuhlman<sup>1,3,\*</sup>

<sup>1</sup>Department of Biochemistry and Biophysics

<sup>2</sup>Department of Pharmacology

<sup>3</sup>Lineberger Comprehensive Cancer Center

University of North Carolina, Chapel Hill, NC 27599, USA

\*Correspondence: [klaus\\_hahn@med.unc.edu](mailto:klaus_hahn@med.unc.edu) (K.M.H.), [bkuhlman@email.unc.edu](mailto:bkuhlman@email.unc.edu) (B.K.)

<http://dx.doi.org/10.1016/j.chembiol.2012.07.009>

(Chemistry & Biology 19, 507–517 April 20, 2012)

We previously reported an unusually fast photocycle lifetime, 2.3 s, for our LOV-SsrAC switch. Upon further characterization of LOV-SsrAC, we have determined that the presence of ~1 mM imidazole in the buffer was responsible for the fast relaxation time. Imidazole has previously been shown to shorten the photocycle relaxation time of the LOV2 domain from *Avena Sativa* (Alexandre et al., 2007). In the absence of imidazole, we measure a relaxation time of  $28.4 \pm 0.1$  s for LOV-SsrAC (phosphate buffered saline: 137 mM NaCl, 2.7 mM KCl, 10 mM Na<sub>2</sub>HPO<sub>4</sub>, 2 mM KH<sub>2</sub>PO<sub>4</sub> (pH 7.4), room temperature).

## REFERENCE

Alexandre, M.T., Arents, J.C., van Grondelle, R., Hellingwerf, K.J., and Kennis, J.T. (2007). A base-catalyzed mechanism for dark state recovery in the *Avena sativa* phototropin-1 LOV2 domain. *Biochemistry* 46, 3129–3137.